

SUPERSEDED

10/6/84 July

TITLE 11
DEPARTMENT OF HEALTH
CHAPTER 54
WATER QUALITY STANDARDS

- §11-54-01 Definitions
- §11-54-02 Classification of State Waters
- §11-54-03 Classification of Water Uses
- §11-54-04 Basic Water Quality Criteria Applicable to All Waters
- §11-54-05 Uses and Specific Criteria Applicable to Inland Waters
- §11-54-06 Uses and Specific Criteria Applicable to Marine Waters
- §11-54-07 Uses and Specific Criteria Applicable to Marine Bottom Types
- §11-54-08 Specific Criteria for Recreational Areas
- §11-54-09 Zones of Mixing
- §11-54-10 Water Quality Analyses
- §11-54-11 Revision
- §11-54-12 Severability

Historical Note: Chapter 54 of Title 11 is based substantially on Public Health Regulations, Chapter 37-A, Water Quality Standards, Department of Health, State of Hawaii. [Eff. 5/25/74, am 12/7/79; R NOV 12 1982]

§11-54-01

§11-54-01 Definitions. As used in this chapter:

"Ambient conditions" means the existing conditions in surrounding waters not influenced by man.

"Best degree of treatment or control" means that treatment or control which is required by applicable statutes and regulations of the State of Hawaii and the Federal Water Pollution Control Act, as amended, or which is otherwise specified by the director considering technology or management practices currently available in relation to the public interest.

"Brackish waters" means waters with dissolved inorganic ions (salinity) greater than 500 ppm (parts per million), but less than 30,000 ppm.

"Director" means the director of health, State of Hawaii, or his duly authorized agent.

"Fresh waters" means all waters with dissolved inorganic ions of less than 500 ppm.

"Saline waters" means waters with dissolved inorganic ions greater than 30,000 ppm.

"State waters" means all waters, fresh, brackish, or salt around and within the State of Hawaii which includes all the islands of the Hawaiian Archipelago together with their appurtenant reefs and waters except the Midway Islands. [Eff. NOV 12 1982] (Auth: HRS §§ 342-3, 342-32) (Imp: HRS §§ 342-3, 342-32)

§11-54-02 Classification of state waters. (a) The provisions of this chapter apply to all state waters excluding the following: groundwater; and ditches, flumes, ponds, and reservoirs required as part of a pollution control system or which are used solely for irrigation water. State waters are classified as either inland waters or marine waters.

(b) Inland waters.

(1) All inland waters are either fresh waters, brackish waters, or saline waters.

(2) All inland fresh waters are classified as follows, based on their physical characteristics, ecological systems, and other natural criteria:

- (A) Streams (perennial or intermittent);
- (B) Springs and seeps, natural lakes, and reservoirs;
- (C) Elevated wetlands;
- (D) Low wetlands;

(3) All inland waters which are brackish waters or saline waters are classified as follows, based on their physical characteristics, ecological systems, and other natural criteria:

- (A) Coastal wetlands;
- (B) Estuaries; and
- (C) Anchialine pools.

(c) Marine waters.

(1) All marine waters are either embayments, open coastal, or oceanic waters.

(2) All marine waters which are embayments or open coastal waters are also classified according to the following bottom subtypes:

SUPERSEDED

10/6/84 LHY

§11-54-03

- (A) Sand beaches;
- (B) Lava rock shorelines and solution benches;
- (C) Marine pools and protected coves;
- (D) Artificial basins;
- (E) Reef flats and reef communities; and
- (F) Soft bottom communities. [Eff. NOV 12 1982] (Auth: HRS §§ 342-3, 342-32) (Imp: HRS §§ 342-3, 342-32)

§11-54-03 Classification of water uses. (a) The following use categories classify inland and marine waters for purposes of applying the standards set forth in this chapter and for the selection or definition of appropriate quality parameters and uses to be protected in these waters.

(b) Inland waters.

(1) Class 1.

(A) General - It is the objective of this class that these waters remain in their natural state as nearly as possible with an absolute minimum of pollution from any human-caused source. To the extent possible, the wilderness character of such areas shall be protected. Waste discharge into these waters is prohibited.

(B) Class 1.a - The uses to be protected in this class of waters are scientific and educational purposes, protection of breeding stock and baseline references from which human-caused changes can be measured, compatible recreation, aesthetic enjoyment, and other nondegrading uses which are compatible with the protection of the ecosystems associated with waters of this class.

(C) Class 1.b - The uses to be protected in this class of waters are for domestic water supplies, food processing, the support and propagation of aquatic life, compatible recreation, and aesthetic enjoyment. Public access to waters in this class may be restricted to protect water quality.

(2) Class 2 - It is the objective of this class of waters that their use for recreational purposes, propagation of fish and other aquatic life, and agricultural and industrial water supply be protected. The uses to be protected in this class of waters are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. Such waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new industrial or sewage discharges will be permitted within estuaries.

(c) Marine waters.

(1) Class AA - It is the objective of this class that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions. To the extent

practicable, the wilderness character of such areas shall be protected. No zones of mixing shall be permitted in this class within a defined reef area, in waters of a depth less than ten fathoms or in waters up to a distance of 1,000 feet off shore if there is no defined reef area and if the depth is greater than ten fathoms. The uses to be protected in this class of waters are oceanographic research, the support and propagation of shellfish and other marine life, conservation of coral reefs and wilderness areas, compatible recreation, and aesthetic enjoyment. The classification of any water area as Class AA shall not preclude other uses of such waters compatible with these objectives and in conformance with the criteria applicable to them.

- (2) Class A - It is the objective of this class of waters that their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. Such waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new industrial or sewage discharges will be permitted within embayments.
- (d) Marine bottom ecosystems.
- (1) Class I - It is the objective of this class of marine bottom ecosystems that they remain as nearly as possible in their natural pristine state with an absolute minimum of pollution from any human-induced source. Uses of marine bottom ecosystems in this class are passive human uses without intervention or alteration, allowing the perpetuation and preservation of the marine bottom in a most natural state, such as for nonconsumptive scientific research (demonstration, observation or monitoring only), nonconsumptive education, aesthetic enjoyment, passive activities, and preservation.
- (2) Class II - It is the objective of this class of marine bottom ecosystems that their use for protection and/or propagation of fish, shellfish, and wildlife, and for recreational purposes not be limited in any way. The uses to be protected in this class of marine bottom ecosystems are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation. Any action which may permanently or completely modify, alter, consume, or degrade marine bottoms, such as structural flood control (Channelization, dams); landfill and reclamation; navigational structures (harbors, ramps); structural shore protection (seawalls, revetments); and wastewater effluent outfall structures may be allowed upon securing approval in writing from the director of health, considering the environmental impact and the public interest pursuant to Section 342-6, HRS, Section 342-32, HRS and Section 342-33, HRS in accordance with the applicable provisions of Chapter 91, HRS. [Eff. NOV 12 1982] (Auth: HRS § 342-32) (Imp: HRS § 342-32)

SUPERSEDED

10/6/84 JHJ

§11-54-05

§11-54-04 Basic water quality criteria applicable to all waters.

(a) All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants, including:

- (1) Materials that will settle to form objectionable sludge or bottom deposits.
- (2) Floating debris, oil, grease, scum, or other floating materials.
- (3) Substances in amounts sufficient to produce taste or odor in the water or detectable off flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity or other conditions in the receiving waters.
- (4) High temperatures; biocides; pathogenic organisms; toxic, radioactive, corrosive, or other deleterious substances at levels or in combination sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water.
- (5) Substances or conditions or combinations thereof in concentrations which produce undesirable aquatic life.
- (6) Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways; subdivisions; recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands.

(b) All state waters are subject to such monitoring as the director may prescribe to identify the actual or potential effects of a discharge that may violate §11-54-04(a) (4), above, as a minimum, a phytoplankton bioassay test or a 96-hour bioassay or both shall be required. The methods and test procedures in §11-54-10 shall be followed, provided that modifications may be prescribed to meet conditions specified to the disposal situation. Survival of test organisms shall not be less than that in controls which utilize appropriate experimental water. Field monitoring may be further required to insure conformance with this standard as long as a discharge or a suspected discharge is occurring.

(c) The standard shall be deemed met upon a showing that the land on which the erosion occurred or is occurring is being managed in accordance with soil conservation practices acceptable to the applicable soil and water conservation district and the director of health, and that a comprehensive conservation program is being actively pursued, or that the discharge has received the best degree of treatment or control, and that the severity of impact of the residual soil reaching the receiving body of water is deemed to be acceptable. [Eff. NOV 12 1982] (Auth: HRS §§ 342-3, 342-32) (Imp: HRS §§ 342-3, 342-32)

§11-54-05 Uses and specific criteria applicable to inland waters.

(a) Definitions.

"Anchialine pools" means standing waters that vary in salinity and basin limits and are not surface connected to the ocean except in rare circumstances. Such pools are natural brackish water exposures which are near coastlines in recent lavas and, rarely, in fossil reefs and which have tidal fluctuations. They are usually small, shallow pools of low salinity (1,000 to 10,000 ppm) with distinctive biota but usually no fishes.

"Coastal wetlands" means natural or man-made ponds and marshes having variable salinity, basin limits, and permanence. Such wetlands usually adjoin the coastline but are not surface connected to the ocean except in rare circumstances. They are usually without tidal fluctuations. Most are characterized by introduced biota, especially fishes.

"Deep" means greater than 6.6 feet or 2 meters.

"Elevated wetlands" means shallow standing water that is always fresh, in more or less indistinct basins such as natural bogs, ponds, and marshes. Such wetlands are found in undisturbed areas, mainly remote uplands and forest reserves.

"Estuaries" means deep characteristically brackish coastal waters in well-defined basins with a continuous or seasonal surface connection to the ocean that allows entry of marine fauna. Estuaries may be either natural, occurring mainly at streams or river mouths; or developed, artificially or strongly modified from the natural state, such as dredged and revetted stream termini.

"Low wetlands" means shallow standing water that is always fresh, ponds or marshes. Such wetlands are found in lowland areas near coasts or in valley termini modified by man. Their origin may be natural or man-made.

"Natural lakes" means deep standing water that is always fresh, in well-defined natural basins.

"Reservoirs" means deep standing water that is always fresh, in well-defined artificially created impoundments.

"Shallow" means less than 6.6 feet or 2 meters.

"Springs and seeps" means small, perennial, relatively constant fresh water flows not in distinct channels, such as wet films or trickles over rock surfaces, in which the water emanates from elevated aquifers. Springs and seeps may be either stream associated, occurring in deeply cut valleys and contributing to stream flow; or coastal, occurring on coastal cliffs and usually flowing into the ocean.

"Streams" means seasonal or continuous water flowing in all or part of natural channels as a result of either surface water runoff or ground water influx, or both. Streams may be either "perennial" or intermittent."

(1) "Perennial streams" means fresh waters flowing down altitudinal gradients in definite natural channels, portions of which may be modified. In such streams, flowing water is present all year, though volume may vary. Such streams may be continuous, with water flowing to the ocean all year, or interrupted, having flow and/or ecologically significant bodies of water only in parts of the channel, with seasonal discharge to the ocean.

(2) "Intermittent streams" means fresh waters flowing down altitudinal gradients in definite natural channels only during part of the year.

(b) Water areas to be protected.

(1) Class 1.a.

(A) All inland waters in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Section 195D, as

SUPERSEDED

10/6/84 JMY

S11-54-05

- amended, or similar reserves for the protection of aquatic life established under Section 195D, HRS, as amended.
- (B) All inland waters in National and State parks.
 - (C) All inland waters in State or Federal fish and wildlife refuges.
 - (D) All inland waters which have been officially identified as a unique or critical habitat for threatened or endangered species.
 - (E) Waimanu Estuarine Sanctuary (Hawaii); Kilauea and Lumahai estuaries (Kauai).
- (2) Class 1.b - All inland waters in protective subzones designated under Regulation 4 of the State Board of Land and Natural Resources.
 - (3) Class 2 - All inland water areas not otherwise classified. Waipio (Hawaii) and Pearl Harbor estuaries are included in this class.
- (c) Criteria.
 - (1) Criteria for springs and seeps, natural lakes, reservoirs, low wetlands, coastal wetlands, and anchialine pools. Only the basic criteria set forth in S11-54-04 apply to springs and seeps, natural lakes, reservoirs, low wetlands, coastal wetlands, and anchialine pools.
 - (2) Specific criteria for streams.
 - (A) Water column criteria for streams.

<u>Parameter</u>	<u>Geometric mean not to exceed the given value</u>	<u>Not to Exceed the given value more than 10% of the time</u>	<u>Not to exceed the given value</u>
Total Kjeldahl Nitrogen (ug/H/1)	250.0* 180.0**	520.0* 380.0**	800.0* 600.0**
Nitrate + Nitrite Nitrogen (ug[NO ₃ +NO ₂]-N/1)	70.0* 30.0**	180.0* 90.0**	300.0* 180.0**
Total Phosphorous (ug P/1)	50.0* 30.0**	100.0* 60.0**	150.0* 80.0**
Total Nonfilterable Residue (ug/1)	20,000.0* 10,000.0**	50,000.0* 30,000.0**	80,000.0* 55,000.0**
Turbidity (Nephelometric Turbidity Units)	5.0* 2.0**	15.0* 5.5**	25.0* 10.0**

* Wet season - November 1 through April 30.

** Dry season - May 1 through October 31.

§11-54-05

pH Units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 5.5 nor higher than 8.0

Dissolved Oxygen - Not less than 80% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Specific Conductance - Not more than 300 microhos/cm.

(B) Bottom criteria for streams.

- (i) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding an equivalent thickness of 5 millimeter (0.20 inch) over hard bottom 24 hours after a heavy rainstorm.
 - (ii) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding an equivalent thickness of 10 millimeter (0.40 inch) over soft bottoms 24 hours after a heavy rainstorm.
 - (iii) In soft bottom material in pool sections of streams, oxidation-reduction potential (E_H) in the top 10 centimeters (4 inches) shall not be less than +100 millivolts.
 - (iv) In soft bottom material in pool sections of streams, no more than 50% of the grain size distribution of sediment shall be smaller than 0.125 millimeter (0.005 inch) in diameter.
 - (v) The director of health shall prescribe the appropriate parameters, measures, and criteria for monitoring stream bottom biological communities including their habitat, which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality criteria for this subsection shall be deemed to be met if time series surveys of benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.
- (3) Specific criteria for elevated wetlands: pH units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 4.5 nor higher than 7.0.
- (4) Specific criteria for estuaries.
- (A) Applicable to all estuaries except Pearl Harbor.

SUPERSEDED

10/6/84 JHJ

S11-54-05

<u>Parameter</u>	<u>Geometric mean not to exceed the given value</u>	<u>Not to exceed the given value more than 10% of the time</u>	<u>Not to exceed the given value</u>
Total Kjeldahl Nitrogen (ug/N/l)	200.00	350.00	500.00
Ammonia Nitrogen (ug NH ₄ - N/l)	6.00	10.00	20.00
Nitrate + Nitrite Nitrogen (ug NO ₃ + NO ₂)-N/l	8.00	25.00	35.00
Orthophosphate Phosphorous (ug PO ₄ -P/l)	10.00	30.00	40.00
Total Phosphorous (ug P/l)	25.00	50.00	75.00
Light Extinction Coefficient (k units)	0.40	0.80	1.00
Chlorophyll <u>a</u>	2.00	5.00	10.00
Turbidity (Nephelometric Turbidity Units)	1.50	3.00	5.00
Nonfilterable Residue (ug/l)	35,000.00	45,000.00	50,000.00

pH Units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 7.0 nor higher than 8.6.

Dissolved Oxygen - Not less than 75% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Salinity (ppm) - Shall not vary more than 10% from ambient conditions.

Oxidation - reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than -100 mv.

(B) Applicable Only to Pearl Harbor Estuary.

S11-54-05

<u>Parameter</u>	<u>Geometric mean not to exceed the given value</u>	<u>Not to exceed the given value more than 10% of the time</u>	<u>Not to exceed the given value</u>
Total Kjeldahl Nitrogen (ug N/l)	300.00	550.00	750.00
Ammonia Nitrogen (ug NH ₄ -N/l)	10.00	20.00	30.00
Nitrate - Nitrite Nitrogen (ug NO ₃ - NO ₂)-N/l	15.00	40.00	70.00
Orthophosphate Phosphorous (ug PO ₄ -P/l)	20.00	48.00	90.00
Total Phosphorous (ug P/l)	60.00	130.00	200.00
Light Extinction Coefficient (k units)	0.80	1.60	2.50
Chlorophyll <u>a</u> (ug/l)	3.50	10.00	20.00
Turbidity (Nephelometric Turbidity Units)	4.00	8.00	15.00
Nonfilterable Residue (ug/l)	50,000.00	75,000.00	100,000.00

pH Units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 6.8 nor higher than 8.8.

Dissolved Oxygen - Not less than 60% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Oxidation - Reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than -100 mv. [Eff. NOV 12 1982] (Auth: HRS §§ 342-3, 342-32) (Imp: HRS §§ 342-3, 342-32)

10/6/84 Jdy

§11-54-06

§11-54-06 Uses and specific criteria applicable to marine waters.

(a) Embayments.

(1) Definition - "Embayments" means land confined and physically protected marine waters with restricted openings to open coastal waters defined by the ratio of total bay volume to the cross-sectional entrance area of 700-1 or greater.

(2) Water areas to be protected.

(A) Class AA.

(i) Hawaii

Oahu

Kauai

Puako Bay

Waialua Bay

Hanalei Bay

Waiulua Bay

Kahana Bay

Anaehoomalu Bay

Kaneohe Bay

Kiholo Bay

Hanauma Bay

Kailua Harbor

Kealakekua Bay

Honaunau Bay

(ii) All embayments in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195, HRS, as amended, or similar reserves for the protection of marine life established under Chapter 190, HRS, as amended.

(iii) All waters in State or Federal fish and wildlife refuges and marine sanctuaries.

(iv) All water which have been officially identified as a unique or critical habitat for threatened or endangered species.

(B) Class A.

Hawaii

Maui

Lanai

Hilo Bay (inside
breakwater)

Kahului Bay
Lahaina Boat

Manele Boat
Harbor

Kawaihae Harbor

Harbor

Kaumalapau

Honokahau Boat

Maalaea Boat

Harbor

Harbor

Harbor

Kawaiahe Boat

Harbor

Keahou Bay

Molokai

Oahu

Kauai

Haleolono Harbor

Kaiaka Bay

Hanamaulu Bay

Kaunakakai

Paiko to

Nawiliwili Bay

Harbor

Kokohead

Kukuiula Bay

Kaunakakai Boat

Ala Wai Boat

Wahiawa Bay

Harbor

Harbor

Hanapepe Bay

Kewalo Basin

(inside

Harbor

breakwater)

S11-54-06

Honolulu Harbor
Keehi Lagoon
Barbers Point
Harbor
Pokai Bay
Heeia-Kea Boat
Harbor
Waianae Boat
Harbor
Haleiwa Boat
Harbor
Kikiaolo Boat
Harbor
Port Allen Boat
Harbor

(3) Specific criteria for embayments.

(Note that criteria for embayments differ based on fresh water inflow.)

<u>Parameter</u>	<u>Geometric mean not to exceed the given value</u>	<u>Not to exceed the given value more than 10% of the time</u>	<u>Not to exceed the given value</u>
Total Kjeldahl Nitrogen (ug N/l)	200.00* 150.00**	350.00* 250.00**	500.00* 350.00**
Ammonia Nitrogen (ug NH ₄ -N/l)	6.00* 3.50**	13.00* 8.50**	20.00* 15.00**
Nitrate & Nitrite Nitrogen (ug (NO ₃ + NO ₂)-N/l)	8.00* 5.00**	20.00* 14.00**	35.00* 25.00**
Orthophosphate Phosphorus (ug PO ₄ -P/l)	10.00* 7.00**	25.00* 12.00**	40.00* 17.00**
Total Phosphorus (ug P/l)	25.00* 20.00**	50.00* 40.00**	75.00* 60.00**
Light Extinction Coefficient (k units)	0.40* 0.15**	0.80* 0.35**	1.20* 0.60**
Chlorophyll <u>a</u> (ug/l)	1.50* 0.50**	4.50* 1.50**	8.50* 3.00**
Turbidity (Nephelometric Turbidity Units)	1.50* 0.40**	3.50* 1.00**	5.00* 1.50**
Nonfilterable Residue (ug/l)	25,000.00* 15,000.00**	40,000.00* 25,000.00**	50,000.00* 35,000.00**

*"Wet" criteria apply when the average fresh water inflow from the land equals or exceeds 1% of the embayment volume per day.

**"Dry" criteria apply when the average fresh water inflow from the land equals or exceeds 1% of the embayment volume per day.

Applicable to both "wet" and "dry" conditions:

pH Units shall not deviate more than 0.5 units from a value of 8.1.

Dissolved Oxygen - Not less than 75% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Salinity (ppm) - Shall not vary more than 10% from natural or seasonal changes considering hydrologic input and oceanographic factors.

(b) Open coastal water.

(1) Definition - "Open coastal waters" means marine waters bounded by the 100 fathom (183 meters or 600 feet) depth contour and the shoreline, excluding bays named in §§11-25-06(a).

(2) Water areas to be protected.

(A) Class AA.

(i) Hawaii - The open coastal waters from Lelewi Point to Waiulaula Point.

(ii) Maui - The open coastal waters between Nakalele Point and Waihee Point, and between Huelo Point and Puu Olai.

(iii) Kahoolawe - All open coastal waters surrounding the island.

(iv) Lanai - All open coastal waters surrounding the island.

(v) Molokai - The open coastal waters between the westerly boundary of Haleolono Harbor to Laau Point, and from Laau Point to Ilio Point and Lamaloa Head. Also, the open coastal waters from Cape Halawa to the easterly boundary of Kaunakakai Harbor.

(vi) Oahu - Waimanalo Bay from Makapuu Point to the southerly boundary of Kaiona Beach Park, and including the waters surrounding Manana and Kaohikaipu Islands. Also, Waialua Bay from Kaiaka Point to Puaena Point, and the open coastal waters along Kaena Point from a distance of 3-1/2 miles (5.6 kilometers) towards Mokuleia and 3-1/2 miles (5.6 kilometers) toward Mauka.

(vii) Kauai - The open coastal waters between Hikimoe Valley and Makahoa Point. Also, the open coastal waters between the westerly boundary of Hoai Bay to Makahuena Point.

(viii) Niihau - All open coastal waters surrounding the islands.

(ix) All other islands of the state - All open coastal waters surrounding the islands not classified in this section.

(x) All open waters in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area

§11-54-06

Reserves, Chapter 195, HRS, as amended, or similar reserves for the protection of marine life established under Chapter 190, HRS, as amended; or in such refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

(B) Class A - All other open coastal waters not otherwise specified.

(3) Specific criteria for open coastal waters.

(Note that criteria for open coastal waters differ, based on fresh water discharges.)

<u>Parameter</u>	<u>Geometric mean not to exceed the given value</u>	<u>Not to Exceed the given value more than 10% of the time</u>	<u>Not to exceed the given value</u>
Total Kjeldahl Nitrogen (ug N/l)	150.00* 110.00**	250.00* 180.00**	350.00* 250.00**
Ammonia Nitrogen (ug NH ₄ -N/l)	3.50* 2.00**	8.50* 5.00**	15.00* 9.00**
Nitrate + Nitrite Nitrogen (ug (NO ₃ + NO ₂)-N/l)	5.00* 3.50**	14.00* 10.00**	25.00* 20.00**
Orthophosphate Phosphorous (ug PO ₄ -P/l)	7.00* 5.00**	12.00* 9.00**	17.00* 13.00**
Total Phosphorus (ug P/l)	20.00* 16.00**	40.00* 30.00**	60.00* 45.00**
Light Extinction Coefficient (k units)	0.20* 0.10**	0.50* 0.30**	0.85* 0.55**
Chlorophyll <u>a</u> (ug/l)	0.30* 0.15**	0.90* 0.50**	1.75* 1.00**
Turbidity (Nephelometric Turbidity Units)	0.50* 0.20**	1.25* 0.50**	2.00* 1.00**
Nonfilterable Residue (ug/l)	20,000.00* 10,000.00**	30,000.00* 15,000.00**	40,000.00* 20,000.00**

*"Wet" criteria apply when the open coastal waters receive more than three million gallons per day of fresh water discharge per shoreline mile.

**"Dry" criteria apply when the open coastal waters receive less than three million gallons per day of fresh water discharge per shoreline mile.

SUPERSEDED

10/6/84 ZJJ

S11-54-06

Applicable to both "wet" and "dry" conditions:

pH Units shall not deviate more than 0.5 units from a value of 8.1.

Dissolved Oxygen - Not less than 75% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Salinity (ppm) - Shall not vary more than 10% from natural or seasonal changes considering hydrologic input and oceanographic factors.

(c) Oceanic waters.

(1) Definition - "Oceanic waters" means all other marine waters outside of the 100 fathom (600 feet or 183 meters) depth contour.

(2) Water areas to be protected - Class A - All oceanic waters.

(3) Specific criteria for oceanic waters.

<u>Parameter</u>	<u>Geometric mean not to exceed the given value</u>	<u>Not to Exceed the given value more than 10% of the time</u>	<u>Not to exceed the given value</u>
Total Kjeldahl Nitrogen (ug N/l)	50.00	80.00	100.00
Ammonia Nitrogen (ug NH ₄ -N/l)	1.00	1.75	2.50
Nitrate + Nitrite Nitrogen (ug (NO ₃ + NO ₂)-N/l)	1.50	2.50	3.50
Orthophosphate Phosphorus (ug PO ₄ -P/l)	1.00	3.00	5.00
Total Phosphorus (ug P/l)	10.00	18.00	25.00
Light Extinction Coefficient (k units)	0.04	0.07	0.10
Chlorophyll <u>a</u> (ug/l)	0.06	0.12	0.20
Turbidity (Nephelometric Turbidity Units)	0.03	0.10	0.20
Nonfilterable Residue	3,000.00	6,000.00	9,000.00

pH Units shall not deviate more than 0.5 units from a value of 8.1.

Dissolved Oxygen - Not less than 75% saturation.

S11-54-07

Temperature - shall not vary more than 1°C from ambient conditions.

Salinity (ppm) - Shall not vary more than 10% from natural or seasonal changes considering hydrologic input and oceanographic factors. [Eff. NOV 12 1982] (Auth: HRS §§342-3, 342-32) (Imp: HRS §§342-3, 342-32)

S11-54-07 Uses and Specific criteria applicable to marine bottom types. (a) Sand beaches.

- (1) Definition - "Sand beaches" means shoreline composed of the weathered clacareous remains of marine algae and animals (white sand), the weathered remains of volcanic tuff (olivine), and the weathered remains of lava (black sand). Associated animals are largely burrowers and are related to particle grain size, slope, and color of the beach.
- (2) Water areas to be protected.
 - (A) Class I - All beaches on the Northwestern Hawaiian Islands. These islands comprise that portion of the Hawaiian archipelago which lies northwest of the island of Kauai and is part of the State of Hawaii; including Nihoa Island, Necker Island, French Frigate Shoals, Brooks Banks, Gardiner Pinnacles, Dowsett and Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Reef, Gambia Shoal, and Kure Atoll.
 - (B) Class I - All beaches not in Class I.
- (3) Specific criteria to be applied to sand beaches.
 - (A) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding an equivalent thickness of 10 mm. (0.40 inch) 24 hours after a heavy rainstorm.
 - (B) Oxidation - reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than -100 mv.
 - (C) No more than 50% of the grain size distribution of sediment shall be smaller than 0.125 mm. in diameter.

(b) Lava rock shoreline and solution benches.

(1) Definitions.

"Lava rock shorelines" means sea cliffs and other verticle rock faces, horizontal basalt, volcanic tuff beaches, and boulder beaches formed by rocks falling from above or deposited by storm waves. Associated plants and animals are adapted to the harsh physical environment and are distinctly zoned to the degree of wave exposure.

"Solution benches" means sea level platforms developed on upraised reef or solidified beach rock by the erosive action of waves and rains. Solution benches are distinguished by a thick algal turf and conspicuous zonation of plants and animals.

(2) Water areas to be protected.

- (A) Class I - All lava rock shorelines and solution benches in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195, HRS, as amended, or

S11-54-07

Marine Life Conservation Districts, Chapter 190, HRS, as amended, or similar reserves for the protection of marine life established under Chapter 190, HRS, as amended; or in such refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

(B) Class II

- (i) All other lava rock shoreline not in Class I.
- (ii) The following solution benches:

<u>Maui</u>	<u>Oahu</u>	<u>Kauai</u>
Kihei	Diamond Head	Near Hanapepe
Papaula Point	Manana Island	Salt ponds
	Makapuu	Milolii
	Laie	Nualolo
	Kahuku	Makaha
	Mokuleia	Mahaulepu
	Makua	Kuhio Beach
	Makaha	Park (Kukuiula)
	Maile	
	Lualualei	
	Barbers Point	

(3) Specific criteria to be applied to lava rock shoreline and solution benches.

(A) Episodic deposits of flood-borne sediment shall not occur in quantities exceeding an equivalent thickness of 5 mm. (0.20 inch) for longer than 24 hours after a heavy rainstorm.

(B) The director of health shall determine parameters, measures, and criteria for bottom biological communities which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality standards for this subsection shall be deemed to be met if time series surveys of benchmark station indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

(c) Marine pools and protected coves.

(1) Definitions.

"Marine pools" means waters which collect in depressions on sea level lava rock outcrops and solution benches and also behind large boulders fronting the sea. Pools farthest from the ocean have harsher environments and less frequent renewal of water and support fewer animals. Those closest to the ocean are frequently renewed with water, are essentially marine, and support more diverse fauna.

"Protected coves" means small inlets which are removed from heavy wave action or surge.

(2) Water areas to be protected.

(A) Class I.

(i) All marine pools and protected coves in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195, HRS, as amended, or Marine Life Conservation Districts, Chapter 190, HRS, as amended, or similar reserves for the protection of marine life established under Chapter 190, HRS, as amended; or in such refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Fisheries Service.

(ii) Hawaii
Honaunau
Kiholo

(B) Class II.

<u>Hawaii</u>	<u>Maui</u>	<u>Molokai</u>
Kalapana	Hana	Cape Halawa
Pohakuloa	Keanae	Kalaupapa
Kopalaoa	Napili	South Coast
Haenokalele	Puu Olai to	
Kapoho	Cape Hanamanioa	
King's Landing (Papai)	Kipahulu	
Hilo		
Leleiwi Point		
Wailua Bay		
<u>Oahu</u>	<u>Kauai</u>	
Diamond Head	Kealia	
Halona Blowhole	Mahaulepu	
to Makapuu	Hanamaulu	
Mokuleia	Poipu	
Kaena Point	Puolo Point	
Makua		
Punaluu		

(3) Specific criteria to be applied to marine pools and protected coves.

- (A) In marine pools and coves with sand bottoms, oxidation - reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than -100 mv.
- (B) In marine pools and coves with sand bottoms, no more than 50% of the grain size distribution of the sediment shall be smaller than 0.125 mm. in diameter.
- (C) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding equivalent thickness for longer than 24 hours following a heavy rainstorm according to the following:

SUPERSEDED

10/6/84 Jdy

S11-54-07

- (i) No thicker than an equivalent of 5 mm. (0.20 inch) on hard bottom (other than living corals).
- (ii) No thicker than an equivalent of 10 mm. (0.40 inch) on soft bottoms.
- (D) The director of health shall determine parameters, measures, and criteria for bottom biological communities which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality standards for this subsection shall be deemed to be met if time series surveys or benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.
- (d) Artificial basins.
- (1) Definition - "Artificial basins" means dredged or quarried channels or harbors, and harbor-associated submerged structures. Many organisms can attach to the vertical structures, but the soft, shifting sediment bottoms of harbors may only be colonized by a few hardy or transient species.
- (2) Water areas to be protected.
 - (A) Class II.
 - (i) Shallow draft recreational harbors.

<u>Hawaii</u>	<u>Maui</u>	<u>Lanai</u>
Wailoa River	Maalaea Boat	Manele Boat
Boat Harbor	Harbor	Harbor
Mahukona Harbor	Lahaina Boat	Kaumalapau
Keauhou Harbor	Harbor	Harbor
Kailua-Kona	Hana Harbor	
Harbor		
Honokahau Boat		
Harbor		
Kawaihae Small		
Boat Harbor		
<u>Molokai</u>	<u>Oahu</u>	<u>Kauai</u>
Kalaupapa	Heeia Kea Boat	Nawiliwili
Anchorage	Harbor	Small Boat
Kaunakakai	Kaneohe Bay	Harbor
Small Boat	Marina	Kukuiula Boat
Harbor	Kaneohe Marine	Harbor
Haleolono	Corps Air	Kikiaola Boat
Small Boat	Station	Harbor
Harbor	Kaneohe Yacht	Port Allen
	Club	Boat Harbor
	Hawaii Kai	
	Marina	
	(Kuapa Pond)	

Oahu

Pokai Bay
 Waianae Harbor
 Keehi Harbor
 La Mariana
 Haleiwa Harbor
 Makani Kai
 Ala Wai Boat
 Harbor
 Keehi Drydock
 Boat Harbor

(ii) Deep draft commercial harbors.

Hawaii

Kuhio Bay
 (Hilo Harbor)
 Kawaihae Deep
 Draft Harbor

Maui

Kahului Harbor

Molokai

Kaunakakai
 Barge Harbor

Oahu

Honolulu Harbor
 Barbers Point
 Harbor
 Kewalo Basin

Kauai

Nawiliwili
 Harbor
 Port Allen
 Harbor

- (3) Specific criterion to be applied - Oxidation - reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than -100 mv.
- (e) Reef flats and reef communities.
- (1) Definitions.

"Nearshore reef flats" means shallow platforms of reef rock, rubble, and sand extending from the shoreline, smaller, younger flats projected out as semicircular aprons while older, larger flats form wide continuous platforms. Associated animals are mollusks, echinoderms, worms, crustaceans (many living beneath the surface), and reef-building corals.

"Offshore reef flats" means shallow, submerged platforms of reef rock and sand between depths of 0 to 3 meters high volcanic islands by lagoons or ocean expanses. Dominant organisms are bottom-dwelling algae. Biological composition is extremely variable. There are three types: patch, barrier, and atoll reef flats; quite different from one another structurally. The presence of heavier wave action, water more oceanic in character, and the relative absence of terrigenous influences distinguish offshore reef flats.

"Protected reef communities" means hard bottom aggregations, including scattered sand channels and patches, dominated by

SUPERSEDED

10/6/84 JHJ

§11-54-07

living coral thickets, mounds, or platforms. They are found at depths of 10 to 30 meters (32 to 96 feet) along protected leeward coasts or in shallow water (up to sea level) in sheltered lagoons behind atoll or barrier reefs and in the calm reaches of bays or coves.

"Wave exposed reef communities" means aggregations, including scattered sand channels and patches, dominated by corals. They may be found at depths up to 40 meters (approximately 130 feet) along coasts subject to continuous or heavy wave action and surge. Wave exposed reef communities are dominated biologically by benthic algae, reef-building corals, and echinoderms.

(2) Water areas to be protected.

(A) Class I.

(i) All reef flats and reef communities in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195, HRS, as amended, or Marine Life Conservation Districts, Chapter 190, HRS, as amended, or similar reserves for the protection of marine life under Chapter 190, HRS, as amended; or in such refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

(ii) Nearshore reef flats.

<u>Hawaii</u>	<u>Maui</u>	<u>Lanai</u>
Puako	Honolua	Northwest Lanai Reef
<u>Molokai</u>	<u>Oahu</u>	<u>Kauai</u>
Western Kalaupapa Southeast Molokai Reef Honomuni Harbor (Kula'alamini Fishpond)	Hanauma Bay	Nualolokai Hanalei (Anini to Haena)

(iii) Offshore reef flats.

Moku o loe (Coconut Island, Kaneohe Bay, Oahu)
Kure Atoll
Pearl and Hermes Reef
Lisianski Atoll
Laysan Island
Maro Reef
French Frigate Shoals

(iv) Wave exposed reef communities.

Hawaii

1823 Lava Flow (Punaluu)
 1840 Lava Flow (North Puna)
 1868 Lava Flow (South Point)
 1887 Lava Flow (South Point)
 1955 Lava Flow (South Puna)
 1960 Lava Flow (Kapoho)
 1969 Lava Flow (Apuna Point)
 1970 Lava Flow (Apuna Point)
 1971 Lava Flow (Apuna Point)
 1972 Lava Flow (Apuna Point)
 1973 Lava Flow (Apuna Point)

Maui

Hana Bay
 Makuleia Bay
 (Honolua)

Molokini Island

All wave exposed reef
 communities

Molokai

Moanui (kahainapohaku)
 Waikolu - Kalawao
 Halawa Bay

Oahu

Sharks Cove (Pupukea)
 Moku Mano Islands
 Outer Hanauma Bay
 Waimea Bay
 Kawela Bay
 Kahana Bay

Kauai

Ke'e Beach (Kailio Point)
 Poipu Beach
 Kipukai

Niihau

All wave exposed
 reef communities

Lehua Island
 (off) Niihau

All wave exposed
 reef communities

(v) Protected reef communities.

Hawaii

Puako
 Honaunau
 Kealakekua
 Kiholo
 Anaehoomalu
 Hapuna
 Kahaluu Bay
 Keaweula (North Kohala)
 Milolii Bay to Keawaiki
 Kailua-Kaiwi (Kona)

Maui

Honolua
 Ahihi-La Perouse
 (including 1970
 Lava Flow at
 Cape Kinau)

SUPERSEDED
10/6/84 July

S11-54-07

Hawaii

Onomea Bay
1801 Lava Flow (Keahole or Kiholo)
1850 Lava Flow (South Kona)
1859 Lava Flow (Kiholo)
1919 Lava Flow (Milolii)
1926 Lava Flow (Milolii)

Molokini Island

All protected reef
communities

Lanai

Manele
Hulopoe

Molokai

Southeast Molokai
Kalaupapa
Honomuni Harbor

Oahu

Hanauma Bay
Moku o loe (Coconut
Island, Kaneohe
Bay)

Kauai

Hoai Bay (Poipu)

Northwestern Hawaiian Islands

Kure Atoll Lagoon
Pearl and Hermes Lagoon
Lisianski Lagoon
Maro Reef Lagoon
French Frigate Shoals Lagoon

(B) Class II

- (i) Existing or planned harbors may be located within nearshore reef flats showing degraded habitats and only where feasible alternatives are lacking and upon written approval by the Director of Health, considering environmental impact and the public interest pursuant to Section 342-6, HRS.

Hawaii

Blonde Reef (Hilo
Harbor)
Kawaihae Small Boat
Harbor

Maui

Lahaina Harbor
Kahului Harbor

Lanai

Manele

Molokai

Kaunakakai Harbors
Haleolono Harbor

Oahu

Keehi Boat Harbor
Ala Moana Reef

Molokai

Palaau (1.5 mile/
2.4 km. East
Pakanaku Fish
Pond)

Oahu

Honolulu Harbor
Heeia Harbor
Kaneohe Yacht Club
Ala Wai Harbor
Haleiwa Harbor
Maunalua Bay
Pearl Harbor
Kaneohe Bay
Kahe

All other nearshore reef flats not in Class I.

(ii) Offshore reef flats.

Oahu

Kapapa Barrier Reef
Kaneohe Patch Reefs (Kaneohe Bay)

(iii) All other wave exposed or protected reef communities not in Class I.

(3) Specific criteria to be applied to all reef flats and reef communities: No action shall be undertaken which would substantially risk damage, impairment, or alteration of the biological characteristics of the areas named herein. When a determination of substantial risk is made by the director, the action shall be declared to be contrary to the public interest and no other permits shall be issued pursuant to Chapter 342, HRS.

(A) Oxidation-reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sand patches shall not be less than +100 mv.

(B) No more than 50% of the grain size distribution of sand patches shall be smaller than 0.125 mm. in diameter.

(C) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding equivalent thickness for longer than 24 hours after a heavy rainstorm as follows:

(i) No thicker than an equivalent of 2 mm. (0.08 inch) on living coral surfaces.

(ii) No thicker than an equivalent of 5 mm. (0.2 inch) on other hard bottoms.

(iii) No thicker than an equivalent of 10 mm. (0.4 inch) on soft bottoms.

(iv) The director of health shall determine parameters, measures, and criteria for bottom biological communities which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality standards for this subsection shall be deemed to be met if time series surveys of benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

SUPERSEDED
10/6/84 gdy

§11-54-07

(f) Soft bottom communities.

(1) Definition - "Soft bottom communities" means poorly described and "patchy" communities, mostly of burrowing organisms, living in deposits at depths between 2 to 40 meters (approximately 6 to 130 feet). The particle size of sediment, depth below sea level, and degree of water movement and associated sediment turnover dictate the composition of animals which rework the bottom with burrows, trails, tracks, ripples, hummocks, and depressions.

(2) Water areas to be protected.

Class II - All soft bottom communities.

(3) Specific criteria to be applied - Oxidation - reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment should not be less than -100 mv.

[Eff. NOV 12 1982] (Auth: HRS §§342-3, 342-32) (Imp: HRS §§342-3, 342-32)

§11-54-08 Specific criteria for recreational areas.

In inland recreational waters and marine recreational waters within 1,000 feet of the shoreline, including natural public bathing areas:

(a) Fecal coliform content shall not exceed a geometric mean of 20 per 100 ml. in 10 or more samples collected during any 30-day period and not more than 10% of the samples shall exceed 400 per ml. in the same period.

(b) Raw or inadequately treated sewage or other pollutants of public health significance, as determined by the director of health, shall not be present in natural public bathing or wading area. [Eff. NOV 12 1982] (Auth: HRS §§342-3, 342-32) (Imp: HRS §§342-3, 342-32)

§11-54-09 Zones of mixing. (a) Definition - "Zones of mixing" means limited areas around outfalls and other facilities to allow for the initial dilution of waste discharges.

(b) Purpose - Zones of mixing for the assimilation of municipal, agricultural, and industrial discharges which have received the best degree of treatment or control are recognized as being necessary. It is the objective of this limited zone to provide for a current realistic means of control over the placement and manner of discharges or emissions so as to achieve the highest attainable level of water quality or otherwise to achieve the minimum environmental impact considering initial dilution, dispersion, and reactions from substances which may be considered to be pollutants.

(c) Establishment, renewal, and termination.

(1) Application for establishment of the zone of mixing shall be made concurrently with any discharge permits whenever applicable and the conditions of the zone of mixing may be incorporated as conditions of such discharge permits. Every application for a zone of mixing shall be made on forms furnished by the director of health and shall be accompanied by a complete and detailed description of present conditions, how

present conditions do not conform to standards, and such other information as the director of health may prescribe.

- (2) Each application for a zone of mixing shall be reviewed in light of the descriptions, statements, plans, histories, and other supporting information as may be submitted upon the request of the director of health, and in light of the effect or probable effect upon water quality standards established pursuant to this chapter.
- (3) Whenever an application is approved, the director of health shall establish the zone of mixing taking into account the environmental impact, including but not limited to such factors as the protected uses of the body of water, existing natural conditions of the receiving water, character of the effluent, and the adequacy of the design of the outfall and diffuser system to achieve maximum dispersion and assimilation of the treated or controlled waste with a minimum of undesirable or noticeable effect on the receiving water.
- (4) Approval of a zone of mixing shall be made either after a public hearing is held by the director of health in the county where the source is situated, in accordance with Chapter 91, HRS and the rules of practice and procedures of the department of health, or after the public notification and comment process duly established for a discharge permit in the case when the zone of mixing is being considered concurrently with the discharge permit.
- (5) No zone of mixing shall be granted by the director of health unless the application and the supporting information clearly show that:
 - (A) The continuation of the function or operation involved in the discharge by the granting of the zone of mixing is in the public interest; and
 - (B) The discharge occurring or proposed to occur does not substantially endanger human health or safety; and
 - (C) Compliance with the existing water quality standards from which a zone of mixing is sought would produce serious hardships without equal or greater benefits to the public; and
 - (D) The discharge occurring or proposed to occur does not violate the basic standards applicable to all waters, will not unreasonably interfere with any actual or probable use of the water areas for which it is classified, and has received (or in the case of a proposed discharge will receive) the best degree of treatment or control.
- (6) Any zone of mixing or renewal thereof shall be granted within the requirements of this section and for time periods and under conditions consistent with the reasons therefore and within the following limitations:
 - (A) If the zone of mixing is granted on the grounds that there is no practicable means known or available for the adequate prevention, control, or abatement of the discharge involved, it shall be only until the necessary means for prevention,

SUPERSEDED
10/6/84 Jdy

S11-54-09

- control or abatement become practicable, and subject to the taking of any substitute or alternative measures that the director of health may prescribe. No renewal of a zone of mixing granted under this subsection shall be allowed without a thorough review of known and available means of preventing, controlling, or abating the discharge involved.
- (B) The director of health may issue a zone of mixing for a period not exceeding five years.
- (C) Every zone of mixing granted under this section shall include, but not be limited to, conditions requiring the grantee to perform appropriate effluent and receiving water sampling including monitoring of bottom biological communities and report the results of each sampling to the director of health. A program of research to develop practicable alternatives to the methods of treatment or control in use by the grantee may be required if such research is deemed prudent by the director of health.
- (7) Any zone of mixing granted pursuant to this section may be renewed from time to time on terms and conditions and for periods not exceeding five years which would be appropriate on initial granting of a zone of mixing, provided that the applicant for renewal had met all of the conditions specified in the immediately preceding zone of mixing, and provided further that the renewal and the zone of mixing established in pursuance thereof shall provide for the discharge not greater in quantity of mass emissions than that attained pursuant to the terms of the immediately preceding zone of mixing at its expiration. No renewal shall be granted except on application therefor. Any such application shall be made at least sixty days prior to the expiration of the zone of mixing.
- (8) No zone of mixing granted pursuant to this part shall be construed to prevent or limit the application of any emergency provisions and procedures provided by law.
- (9) The establishment of any zone of mixing shall be subject to the concurrence of the U.S. Environmental Protection Agency.
- (10) The director of health, on his own motion or upon the application of any person, shall terminate a zone of mixing if, after a hearing, he determines that the water area does not meet the basic criteria applicable to all water areas, or that the zone of mixing granted will unreasonably interfere with any actual or probable use of the water area, or that the discharge does not receive (in the case of new discharge will not receive) the best degree of treatment or control. Such termination shall be made only after a hearing held by the director of health on the island where the area is situated in accordance with Chapter 91, HRS and the rules of practice and procedures of the department of health. Upon such termination, the standards of water quality applicable thereto shall be those established for the water as otherwise classified.

§11-54-10

- (11) Upon expiration of the period stated in the designation, the zone of mixing shall automatically terminate and no rights shall become vested in the designee.

[Eff. NOV 12 1982] (Auth: HRS §§342-3, 342-32) (Imp: HRS §§342-3, 342-32)

§11-54-10 Water quality analyses. (a) Laboratory analysis shall be performed by a laboratory approved by the director of health.

(b) Where applicable, analysis to determine compliance with these regulations shall be by:

<u>Parameter</u>	<u>Reference</u>
Sample Collection (Phytoplankton and other Bioassay)	<u>Standard Methods for the Examination of Water and Waste Water</u> , Fourteenth Edition, APHA.
Sample Preservation and Holding Time	<u>Handbook for Evaluating Water Bacteriological Laboratories</u> , 1975, EPA, p. 19, or: <u>Methods for Chemical Analysis of Water and Wastes</u> , 1976, EPA. Table II, or: <u>Manual of Analytical Methods for the Analysis of Pesticide Residues in Human and Environmental Samples</u> , 1974, EPA, Section 2.
Bacteriological and Chemical Methodology	"Guidelines Establishing Test Procedures for Analysis of Pollutants, Amendments" <u>Federal Register</u> , December 1, 1976 and July 20, 1977.
96-hour Bioassay	Stephin, Charles P., <u>Methods for Acute Toxicity Test with Fish, Macroinvertebrates, and Amphibians</u> , Duluth, Minn., NERC. April, 1975, or: Telpier, William, <u>Methods for Measuring the Acute Toxicity of Effluents to Aquatic Organisms</u> , Cincinnati, Ohio, EMSL, January, 1978.
Quality Control: Bacteriological and Biology	"Elements of a Quality Assurance Program," <u>Assessment of Laboratory Needs and Field Sampling Equipment for the California Regional Boards</u> , 1974.

SUPERSEDED
10/6/84 *gdy*

§11-54-10

Chemistry

Handbook for Analytical Quality Control,
EPA, 1972 or its revisions, or:

As otherwise previously specified or
approved by the Director of Health.

[Eff. NOV 1 2 1982
§§342-3, 342-32)

] (Auth: HRS §§342-3, 342-32) (Imp: HRS

§11-54-11 Revision. These water quality criteria are based upon the best currently available data. Studies made in connection with the implementation program may suggest improvements to this chapter. For this reason, the chapter will be subject to periodic review and, where necessary, to change. Any change will be made only after public hearing, held in compliance with Chapter 91, HRS and the rules of practice and procedures of the department of health.

[Eff. NOV 1 2 1982] (Auth: HRS §§342-3, 342-32) (Imp: HRS §§342-3, 342-32)

§11-54-12 Severability. If any provisions of this chapter, or the application thereof to any person or circumstances, is held invalid, the invalidity does not affect other provisions or application of this chapter which can be given effect without the invalid provision or application, and to this end the provisions of this chapter are severable.
[Eff. NOV 1 2 1982] (Auth: HRS §§342-14) (Imp: HRS §§342-14)

The Department of Health authorized the repeal of Chapter 37-A, Public Health Regulations, and the adoption of Chapter 54 of Title 11, Administrative Rules on Water Quality Standards, following public hearing held on Oahu on February 24, 1982, on Hawaii on February 17, 1982, on Kauai on March 2, 1982, on Maui on February 16, 1982, after public hearing notice was given in the Honolulu Advertiser on January, 12, 1982, in the Hawaii Tribune-Herald on January 12, 1982, in the Garden Isle on January 14, 1982, and in the Maui News on January 15, 1982.

Chapter 54 of Title 11, Administrative Rules and the repeal of Chapter 37-A, Public Health Regulations, shall take effect ten days after filing with the Office of the Lieutenant Governor.



CHARLES G. CLARK

Director

Department of Health

Dated: OCT 26 1982

APPROVED:



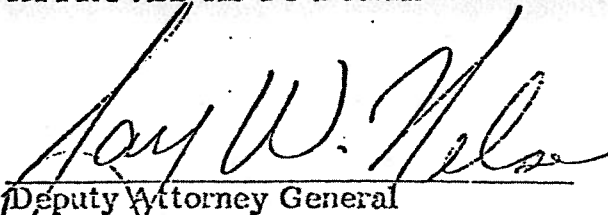
GEORGE R. ARIYOSHI

Governor

State of Hawaii

Dated: 10-28-82

APPROVED AS TO FORM:


Deputy Attorney General

Filed: November 1, 1982

Effective Date: November 12, 1982

REC'D.

1982 NOV 1 AM 9:00

LT. GOVERNOR'S OFFICE